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Evaluation of Rear Window Defrosting and Defogging Systems – Technical Report
Notice of Request for Comments, 69 FR 20665 *et seq.*, April 16, 2004

The National Highway Traffic Safety Administration (NHTSA) has issued a technical report entitled, *Evaluation of Rear Window Defrosting and Defogging Systems*, DOT HS 809 724, March 2004. The agency requests public comments on its finding that such rear window clearing systems, which are not required as safety features on motor vehicles by current federal standards administered by NHTSA, have no safety benefits for both lane change and backing crashes in the conditions when they are most likely used, such as in rain and snow or during early parts of the morning in certain seasons of the year to dispel rear window haze or mist.

The research protocol used by the agency in this technical evaluation of the safety value of rear window clearing systems initially involved extraction of relevant crash reports from the files of several states. Since rear window clearing systems are optional equipment, the agency also relied on defogger and wiper information published annually in the Ward's Automotive Yearbook. This allowed NHTSA to determine the percentage of factory-installed rear window defoggers and wipers by model year for both cars and light trucks. In recent years the percentage of OEM rear window clearing systems provided in cars has been very high, over 90 percent. However, domestic light trucks, especially pickup trucks, still have a high percentage of vehicles sold without rear window clearing systems.

NHTSA tested several hypotheses for its analysis of safety benefits of rear window clearing systems by using logistic regression to estimate effects and several controlling variables were introduced to counter confounders. The net result of these analyses were that rear window defoggers show no benefit for either lane changing or backing crashes under the conditions where they most probably would be used.

Advocates disagrees with this conclusion for backing crashes and their consequences. We believe that rear window clearing systems can have a significant, positive effect on avoiding backing crashes into children and other people of short stature (*e.g.*, disabled persons in wheelchairs), especially in circumstances off public rights of way, such as private driveways and parking lots. NHTSA has acknowledged that it has little information about backing incidents taking lives and inflicting severe injuries for vehicles not on public roads and streets.[1] Moreover, the technical report acknowledges that the state databases relied upon "had no information whether specific, individual crash-involved vehicles were equipped with defoggers."[2] In addition, "the presence of rear-window defoggers and wipers generally cannot be deduced from the first 12 characters of the VIN [Vehicle Identification Number], and it is rarely (if ever) mentioned on crash data files."[3] Furthermore, although the agency for its analysis of benefits used combinations of rear-window files and state crash files, the analysis included "[o]nly cars with rear damage."[4] It is patent that backing incidents into small children, for example, especially at low speeds, often result in no vehicle damage whatever and, in any event, the crashes are usually not entered into crash databases because they did not occur on public roads. However, backing incidents that could have occurred on public roads, such as backing crashes resulting from drivers negotiating on-street parking spots, are excluded from this analysis if there is no recorded vehicle damage, a common occurrence in low-speed, run-over crashes.[5]

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[1] NHTSA has attempted to glean such information from reviewing death certificates. A recent report relied on examination of 4,046 1998 death certificates from 35 states and the District of Columbia. A total of 91 deaths from backing incidents were found which the agency projects to about 120 nationwide on an annual basis. Age distribution of backing fatalities is very uneven, with children ages one through four dramatically overrepresented (40 deaths in the 36 jurisdictions) as well as the elderly 70 years of age and older (27 deaths in the 36 jurisdictions). However, of the total of 91 backing victims, 21 occurred in driveways, 21 are characterized as "home," 21 took place in parking lots, and 13 are designated as "other off road." This means that, of the backing deaths detected, at least 76 of the 91 deaths, or more than 80 percent, occurred off public roads and right-of-way. *See* http://www.nhtsa.dot.gov/cars/problems/studies/NonTraffic-NonCrash/Pages/4Discussion.htm. NHTSA's associated literature review for this study points out that it is not possible to determine the exact number of people killed in backing incidents. The agency also concludes from its literature survey that these backing deaths usually occur in driveways or parking lots and more often than not involve pickup trucks and sport utility vehicles. See http://www.nhtsa.dot.gov/cars/problems/studies/NonTraffic-NonCrash/Pages/Appendix5.htm. Advocates believes that this overrepresentation of these types of light trucks is due to the often much poorer rearward visibility for drivers in these vehicles.

[2] "Evaluation of Rear Window Defrosting and Defogging Systems," *op. cit.*, Executive Summary, p. v.

[3] *Id.*, p. 1.

[4] *Id.*, p. 10.

[5] Kids And Cars, a national public interest organization devoted to uncovering the enormous proportions of the tragedy of children killed in run-over incidents, as well in non-crash vehicle-related events, disputes figures provided by NHTSA as severely underreporting the extent of deaths due to run-over, especially backing, fatal incidents. In its most recent full reporting year, 2003, Kids And Cars estimates that at least 91 children alone have died in back-over incidents, an increase of 57 percent over available figures for 2002. This number is more than double the number of backover deaths of young children age one through nine generated by NHTSA's most recent published review of 1998 death certificates for 35 states plus the District of Columbia (*see* above, footnote 1). However, Kids and Cars believes that both the agency's figures and its own number for children backover deaths still represent substantial underreporting of the

NHTSA is well aware of the growing realization among the motoring public that rear visibility, especially in light trucks and vans, can be very poor, with very long lines of sight for drivers to detect low objects and persons to their rear. Furthermore, some current designs of head restraints clearly block rear visibility to a considerable extent, especially for short-statured female drivers in sport utility vehicles and vans. Despite these design features substantially impairing driver rear visibility, NHTSA has taken no action to improve rear visibility for drivers of passenger vehicles, particularly light trucks and vans. Advocates is not persuaded that NHTSA in this technical report has shown the lack of safety benefits for rear window clearing systems given the rear visibility obstructions of current passenger vehicles, especially light trucks and vans. The level of analysis for benefits in the report is much too gross, and it relies on assumptions and data exclusions that ignore the issue of backing incidents that occur at low speeds off public roads and involve no detectable vehicle damage.

Advocates does not regard this report as a credible basis for NHTSA to make a policy judgment on the benefits of rear window clearing systems, at least for backing incidents. If the purpose of this exercise is the implication that it serves as justification for the agency to eliminate any consideration of rear window clearing systems as a federal motor vehicle safety standard, then that reliance is misplaced. The technical report does not demonstrate that rear window clearing systems do not enhance rear visibility for some drivers that effectively decrease the risk of run-over incidents when vehicles move in reverse.

Respectfully submitted,
ORIGINAL SIGNED
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actual fatality toll in backing incidents involving children. Kids And Cars also believes that the problem of backing incidents has been made increasingly severe because of the rising proportion of SUVs in the nation's vehicle fleet that have poorer rear visibility for their drivers than passenger cars. *See* http://www.kidsandcars.org.